Palmtop Computers in Medicine

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ABSTRACT

The University of Arizona College of Medicine was recently awarded a grant from the Hewlett-Packard Corporation to study the use of palmtop computers in medical education. As participants in the grant, we have begun to work to develop palmtop computer applications relevant to our medical education as students, residents and attending physicians. Medical students, patients, and other health professionals will benefit from the many capabilities of the machine.

THE MACHINE

The Hewlett-Packard 95LX is configured with 1 MB of memory, and has several applications pre-installed.

These include:
-Lotus 1-2-3, Version 2.2
-A full-function HP calculator
-Communications software
-Telephone/Address database
-Appointment scheduling software
-A memo editor
-MS-DOS version 3.30
Hardware included are:
-One expansion slot that will accept RAM cards or other peripherals such as modems or paging devices.
-A 4-pin serial port
-An infra-red communication port for printing and file-exchange.

The palmtop computer uses 2 AA batteries with an average life of 30 hours. The palmtop computer fits in a jacket or lab coat pocket, which makes it convenient to use in a clinical setting. A full, but small, keyboard is standard.

CLINICAL APPLICATIONS

We have already begun using the palmtop computer in clinical work and are in the process of developing programs pertinent to clinical education.

We have loaded a complete "history and physical" template, written for a normal patient. The template can guide a beginning student through the history and physical, reminding him or her of pertinent questions and exam findings that may not have been asked or elicited during the initial interview. When it is complete, it may be printed on a laser printer equipped with an infra-red interface.

In the Pediatrics rotation, we have produced a simple Lotus spreadsheet with dosing schedules for commonly used pharmaceuticals. In the area of Preventive Medicine, we have developed an interactive, palmtop version of The Guide to Clinical Preventive Services produced by the U.S. Preventive Services Task Force. The software assists medical students in choosing the most appropriate clinical prevention interventions during outpatient clinical visits. A palmtop prenatal care manager is in the planning stages at this time.

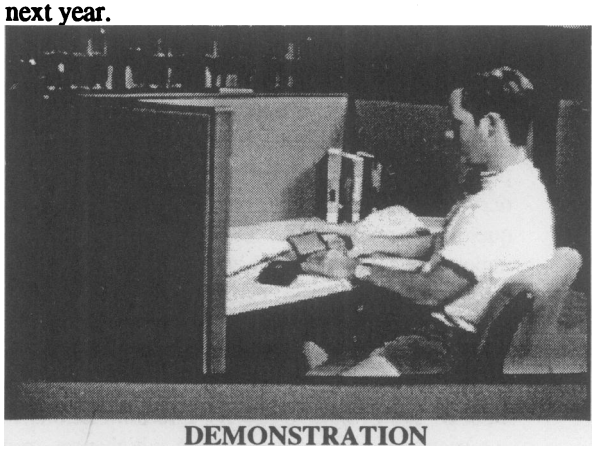
We are also exploring interfaces with hospital information systems, including wireless connections using paging devices already marketed for the 95LX .

ADMINISTRATIVE APPLICATIONS

We are attempting to produce a version of student clerkship schedules designed for the appointment software of the palmtop. These schedules would be downloaded into student palmtop computers on the first day of a clinical rotation. Schedule updates could be quickly distributed either centrally from clerkship offices or student-to-student via infra-red ports. Once tested, this function will be used by departments to distribute electronic phone directories, financial aid information, and administrative memorandums.

Patient logs, which are required to be kept by students, may be maintained on the palmtop and downloaded to clerkship offices for storage and analysis.

The area of electronic communication is of particular interest to us. We plan to establish the palmtop computer as our principal access to the Internet in the next year.



DEMONSTRATION

-Data exchange between palmtops.
-Simulation of data exchange with hospital information system.
-Data exchange between palmtops and other computers
-Printing with the infra-red interface.
-Use of medical specialty-specific applications.
-Use of built-in palmtop applications

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